**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A preheat chamber for conditioning an exposed imaging material having a conditioning threshold temperature and a development temperature higher than said conditioning threshold temperature, the preheat chamber comprising:

a chamber housing having an entrance and an exit; ~~and~~

a transport system for moving exposed imaging material through said chamber housing between said entrance and said exit;

a heating system configured to heat the exposed imaging material to a desired conditioning temperature above the conditioning threshold temperature and below the development temperature as the imaging material is moved through the chamber housing;

wherein the imaging material includes an aqueous-based emulsion of heat sensitive materials in an aqueous-based solvent, wherein the desired conditioning temperature causes moisture to be released from the aqueous-based emulsion, and wherein the preheat chamber maintains the imaging material at the desired conditioning temperature for a required time period to cause substantially all moisture to be released from the aqueous-based emulsion before it is developed; and

an evacuation system for removing from said chamber housing substantially all water vapor and other byproducts released from the aqueous based emulsion.

2. (Canceled)

3. (Original) The preheat chamber of claim 1, wherein the desired conditioning temperature is within a conditioning temperature range.

4. (Original) The preheat chamber of claim 3, wherein the desired conditioning temperature ranges from 110 degrees centigrade to 130 degrees centigrade.

5. (Original) The preheat chamber of claim 3, wherein an upper temperature level of the temperature range at a margin below the development temperature to ensure that development does not occur, and a lower temperature level at a margin above the conditioning threshold temperature.

6. (Original) The preheat chamber of claim 1, wherein the desired conditioning temperature is substantially equal to 110 degrees centigrade.

7. (Currently Amended) The preheat chamber of claim ~~2,~~ ~~further comprising:~~ 1 wherein said ~~a~~ transport system is configured to move the imaging material through the chamber housing along a transport path proximate to the heating system.

8. (Currently Amended)) The preheat chamber of claim 7, ~~wherein the chamber housing includes an entrance and an exit, and~~ wherein the transport system receives the imaging material at an ambient temperature at the entrance and, after moving the imaging material through the preheat chamber along the transport path, provides the imaging material at the exit substantially at the conditioning temperature and with substantially all of the moisture released from the emulsion.

9. (Original) The preheat chamber of claim 8, wherein the transport system moves the imaging material through the preheat chamber at a rate such that the imaging material is maintained at the desired conditioning temperature for the required time period.

10. (Currently Amended) The preheat chamber of claim ~~2~~ 1, wherein the imaging material is coated on a first and a second major surface with the emulsion, and wherein the heating system is configured to heat the first and

second major surfaces to a temperature substantially equal to the desired conditioning temperature.

11. (Original) The preheat chamber of claim of claim 10, wherein the heating system includes a plurality of zones, wherein a temperature of each zone is individually controllable.

12. (Currently Amended) A thermal processor for thermally developing an image in an imaging material having a conditioning threshold temperature and a developing threshold temperature higher than said conditioning threshold temperature, the thermal processor comprising:

a preheat chamber configured to receive the imaging material at an ambient temperature and to heat the imaging material to a desired conditioning temperature at least equal to the conditioning threshold temperature but less than the development threshold temperature; and

a dwell chamber thermally isolated from said preheat chamber configured to receive the imaging material at the conditioning temperature and to heat the imaging material to a desired developing temperature at least equal to the developing threshold temperature.

13. (Original) The thermal processor of claim 12, wherein an incremental difference between the desired conditioning temperature and the desired developing temperature does not exceed a predetermined amount.

14. (Original) The thermal processor claim 13, wherein the predetermined amount is 40 degrees centigrade.

15. (Original) The thermal processor of claim 12, wherein the dwell chamber is configured to maintain the imaging material at the desired developing temperature for a time period resulting in substantially optimal development of the image.

16. (Original) The thermal processor of claim 12, wherein the dwell chamber is thermally isolated from the preheat chamber.

17. (Original) The thermal processor of claim 12, wherein the preheat chamber further comprises:

a heating system configured to heat the imaging material to the desired conditioning temperature; and

a transport system configured to move the imaging material through the preheat chamber.

18. (Original) The thermal processor of claim 17, wherein the dwell chamber further comprises:

a heating system configured to heat the imaging material from the desired conditioning temperature to the desired developing temperature; and

a transport system configured to move the imaging material through the preheat chamber.

19. (Currently Amended) The thermal processor of claim 18, wherein the imaging material is coated with an aqueous-based emulsion having a moisture level, wherein preheat chamber heating system heats said imaging material to a temperature at least equal to the conditioning threshold temperature causes moisture to be released from the emulsion, and wherein said dwell chamber heating system heats said imaging material to a temperature at least equal to the development threshold temperature causes the image to develop.

20. (Currently Amended) The thermal processor of claim 19, wherein the preheat chamber is configured to maintain the imaging material at the conditioning temperature for a time period necessary to cause substantially all of the moisture to be released from the emulsion and including an evacuation system for removing substantially all of the released moisture vapor from said preheat chamber.

21. (Original) The thermal processor of claim 20, wherein the preheat chamber transport system moves the imaging material through the preheat chamber at a rate such that imaging material is maintained at the desired conditioning temperature for the time period necessary to cause substantially all of the moisture to be released from the emulsion.

22. (Original) The thermal processor of claim 21, wherein the dwell chamber transport system moves that imaging material through the dwell chamber at a rate substantially equal to the rate at which the preheat chamber transport system moves the imaging material through the preheat chamber.

23. (Currently Amended) A preheat chamber for preconditioning a thermally processable exposed imaging material for development, the exposed imaging material having a first and a second major surface and coated on at least one of the major surfaces with a moisture-sensitive aqueous-based emulsion, the preheat chamber comprising:

a heating system configured to heat the thermally processable exposed imaging material to a desired temperature within a temperature range high enough to cause substantially all moisture to be released from the aqueous-based emulsion but below a development temperature of the imaging material;

an evacuation system configured to couple to an external vacuum system to remove the released moisture from the preheat chamber; and

a transport system that moves the imaging material through the preheat chamber along a transport path.

24. (Original) The preheat chamber of claim 23, wherein the desired temperature is within a temperature range.

25. (Original) The preheat chamber of claim 23, wherein the desired temperature is substantially equal to 110 degrees centigrade.

26. (Original) The preheat chamber of claim 23, wherein the heating system comprises:

a first heating member positioned along the transport path so as to be proximate to the first major surface of the imaging material; and

a second heating member positioned along the transport path so as to be proximate to the second major surface of the imaging material.

27. (Original) The preheat chamber of claim 26, wherein the first and second heating members each comprise a plurality of individually controllable zones that can each be heated to a different temperature level.

28. (Original) The preheat chamber of claim 27, wherein each zone has a corresponding sensing device to monitor the temperature level of the zone.

29. (Original) The preheat chamber of claim 26, wherein the first and second heating members each comprise:

a heat plate having a first major surface proximate to the imaging material and a second major surface; and

a blanket heater bonded to the second major surface.

30. (Original) The preheat chamber of claim 29, wherein the heat plate is aluminum.

31. (Original) The preheat chamber of claim 23, wherein the conveyance system comprises:

a first plurality of rotatable members positioned along the transport path so as to contact the first major surface of the imaging material; and

a second plurality of rotatable member positioned along the transport path so as to contact the second major surface of the imaging material.

32. (Original) The preheat chamber of claim 31, wherein at least one of the first plurality of rotatable members is driven in a first direction and at least one of the second plurality of rotatable members is driven in direction

opposite the first direction such that contact with the imaging material moves the imaging material along the transport path.

33. (Original) The preheat chamber of claim 31, wherein each of the rotatable members comprises a roller having a cylindrical shaft covered with a support material.

34. (Original) The preheat chamber of claim 33, wherein the cylindrical shafts are aluminum.

35. (Original) The preheat chamber of claim 23, further comprising:

an enclosure encompassing the heating system and the conveyance system, wherein the enclosure and heating system form an oven enclosing the conveyance system, wherein the enclosure has an entrance to the oven and an exit from the oven, and wherein the conveyance system moves the imaging material through the oven along the transport path from the oven entrance to the oven exit.

36. (Original) The preheat chamber of claim 35, wherein the evacuation system includes at least one exhaust port extending through the enclosure and configured to couple to the external vacuum system such that the external vacuum system draws air from the oven through the at least one exhaust port to thereby exhaust air and substantially all of the released moisture from the oven via the at least one exhaust port.

37. (Original) The preheat chamber of claim 36 wherein the evacuation system further includes an air flow path through the heating system such that the external vacuum system draws external air through the heating system and into the oven, such that the external air is heated to a temperature substantially equal to a temperature of the oven before entering the oven.

38. (Currently Amended) A method of thermally processing an exposed imaging material having a conditioning threshold temperature and a

development threshold temperature higher than said conditioning threshold temperature, the method comprising:

first heating the exposed imaging material to a conditioning temperature at least equal to the conditioning threshold temperature but less than the development threshold temperature; and

maintaining the imaging material at the conditioning temperature for a time period.

39. (Currently Amended) The method of claim 38, further comprising:

second heating the exposed imaging material from the conditioning temperature to a developing temperature at least equal to the development threshold temperature, wherein said second heating is thermally isolated from said first heating ; and

maintaining the imaging material at the developing temperature for a time period to develop the image in said exposed imaging material.

40. (Currently Amended) A thermal processor for thermally developing an image in an exposed imaging material having a conditioning ~~threshold~~ temperature range and a developing ~~threshold~~ temperature range higher than said conditioning temperature range, the thermal processor comprising:

means for heating the exposed imaging material from a given ambient temperature to a desired conditioning temperature that is at least ~~equal to~~ within the conditioning ~~threshold~~ temperature range but less than a temperature within the developing ~~threshold~~ temperature range, so as not to develop said image in said exposed imaging material .

41. (Currently Amended) The thermal processor of claim 40, wherein the imaging material includes a moisture-sensitive aqueous-based emulsion including heat sensitive materials in an aqueous-based solvent, and wherein the desired conditioning temperature range causes moisture to be released from the emulsion, the thermal processor further comprising:

means for maintaining the imaging material at the desired conditioning temperature for a time period necessary to cause substantially all moisture to be released from the emulsion; and

means for evacuating said moisture from the environment around said imaging material .

42. (Currently Amended) The thermal processor of claim 41, further comprising:

means for heating the imaging material from the desired conditioning temperature to a desired developing temperature, wherein the desired developing temperature is ~~at least equal to~~ within the developing ~~threshold~~ temperature range.

43. (Original) The thermal processor of claim 42, further comprising:

means for maintaining the imaging material at the desired developing temperature for a time period resulting in substantially optimal thermal development of the image.

44. (New) A method of developing a gelatin based photothermographic imaging material comprising:

providing an exposed photothermographic imaging material including a base material coated on each side with an aqueous based emulsion of heat sensitive materials including developers in an aqueous based solvent;

heating said exposed photothermographic imaging material in an enclosed preheat chamber to a temperature within a conditioning temperature range, but below a development temperature range to release fluid, consisting primarily of water, in the form of vapor from the emulsion for a period so that substantially all of the fluid including water is released from the emulsion; and

evacuating said vapor from said preheat chamber.

45. (New) The method of claim 44 including developing said exposed photothermographic imaging material in a dwell chamber thermally isolated from said preheat chamber at a development temperature within a

development temperature range that is higher than said conditioning temperature range for a development period that will provide substantially optimal development of the exposed image in said imaging material.